

NAEHS Council: "NIEHS Vision"

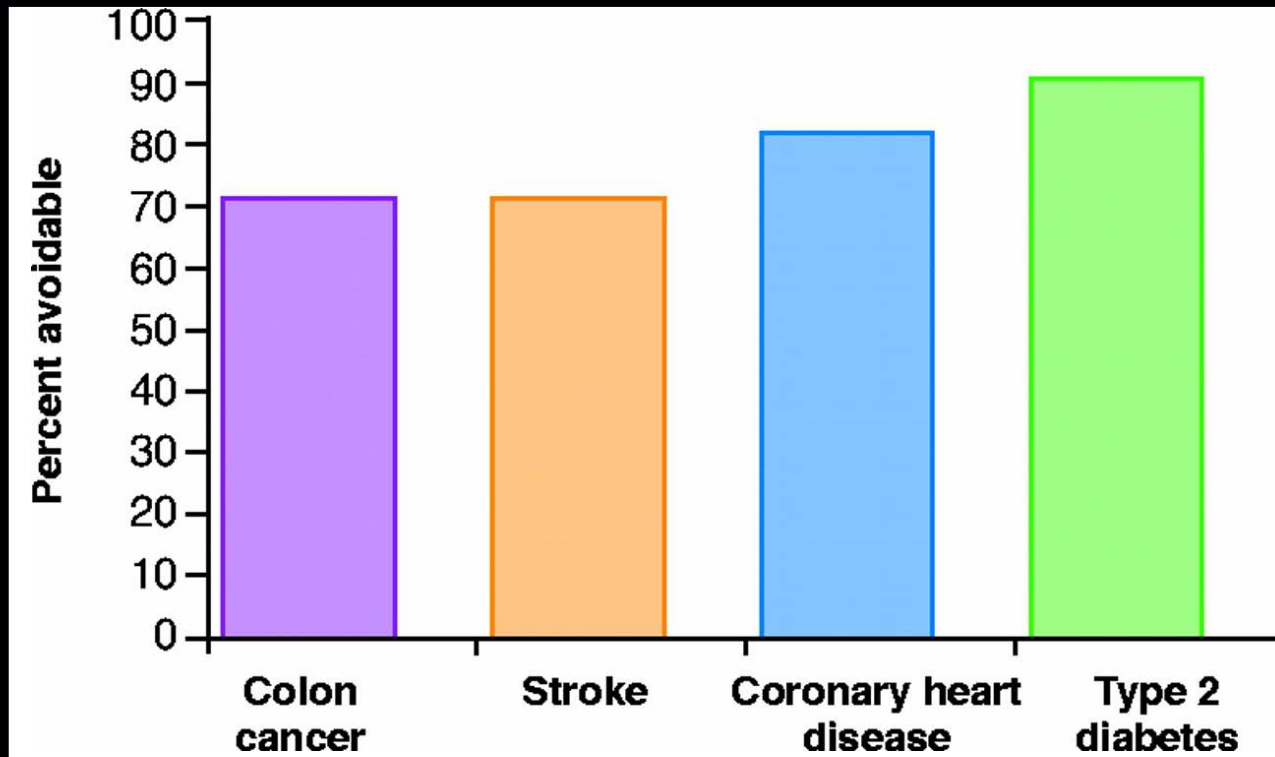
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National Advisory Environmental Health Sciences Council

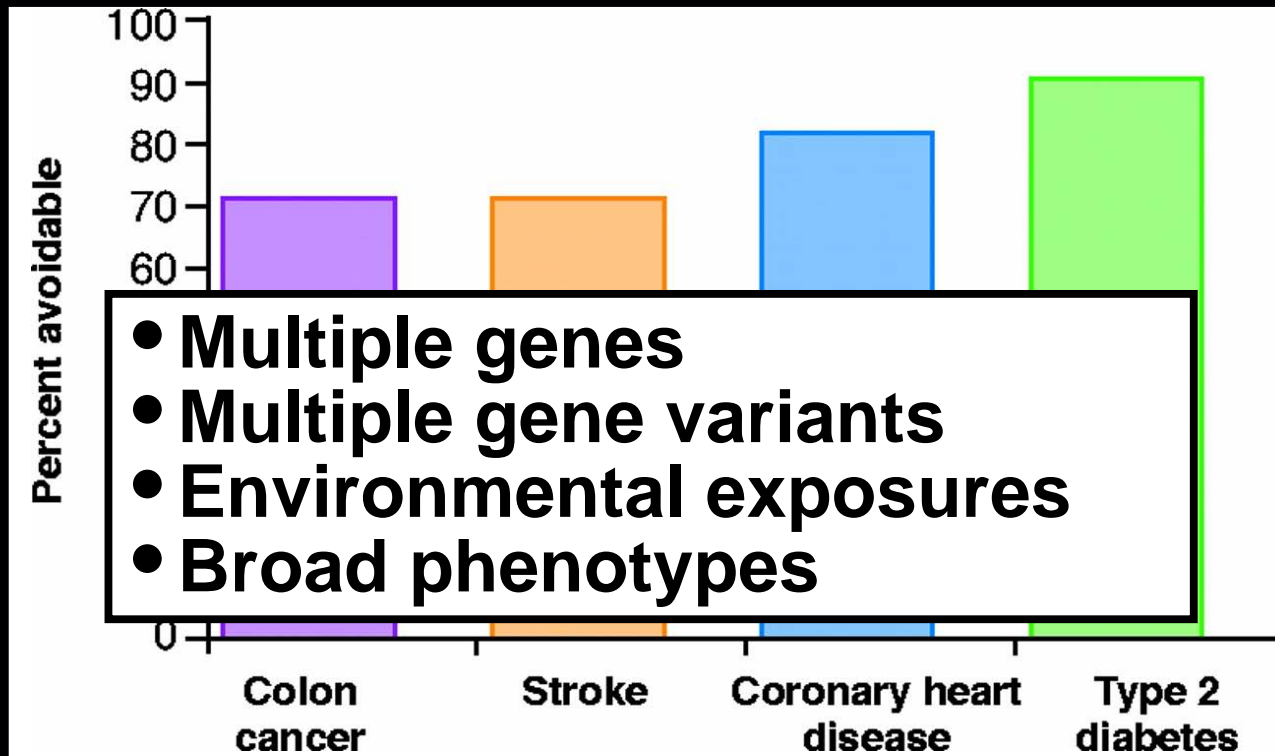
- **Evolving vision of NIEHS**
- **Strategic Planning**
- **Anticipated role of the Council**

Etiology of Complex Human Diseases



- 70-90% of the major diseases in the USA are caused by reversible behaviors and exposures
- Single gene mutations are the major cause of cancers and CVD in < 5% of the cases

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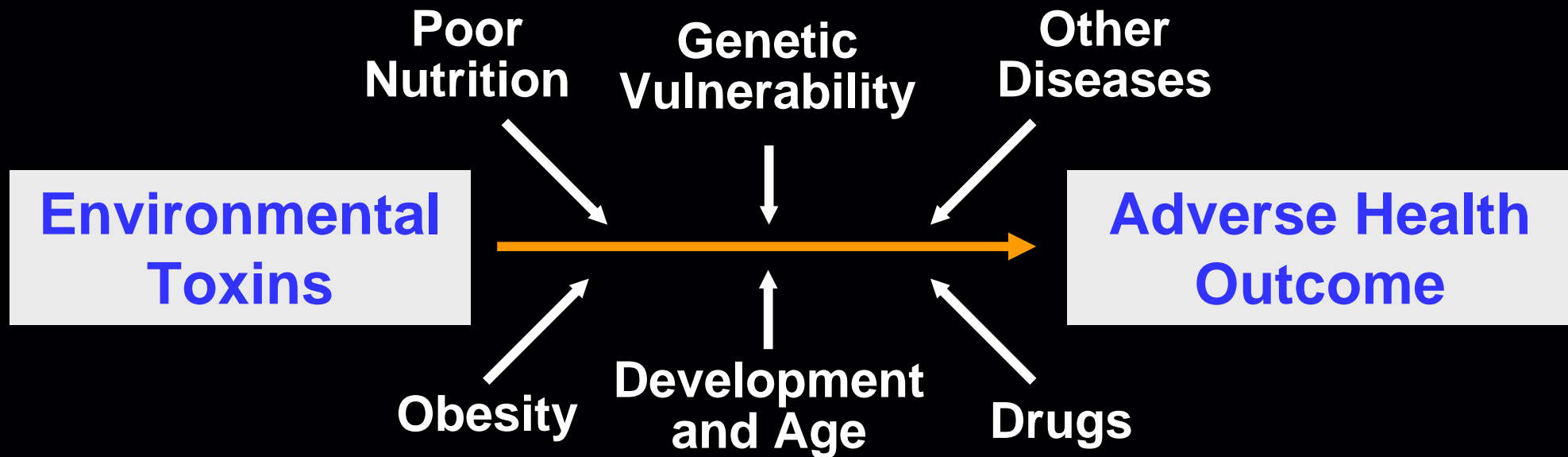


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A Vision in Evolution at NIEHS

- **Emphasis on human health and disease**
- **Improve human health by supporting research and career development in environmental sciences, environmental medicine, and environmental public health**
- **Goal is to use this knowledge and approach understand human biology, reduce morbidity, and extend longevity**

Why do certain people develop disease when challenged with environmental toxins while others remain healthy?



Impact of Environmental Research on Human Disease

- **Methylmercury and neurodevelopmental deficits in the fetus**
- **Aflatoxin in the development of hepatocellular carcinoma**
- **Manganese in neurodegenerative disorders**
- **Developmental, cardiovascular, and renal effects of lead**
- **Role of polluted air in asthma attacks, and deaths from COPD and cardiovascular disease in the elderly**
- **Contribution of paraoxonase to pesticide toxicity**
- **Biomarkers of beryllium induced lung disease**
- **Effect of nitrous oxide on fertility**

The Vision: Approaches and Values

- **Excellence and Impact** – support the very best science that will have the greatest impact on human health
- **Integrate disciplines and focus on disease** – integrate environmental sciences with related disciplines (basic science, computational biology, medicine, and public health) and focus on relevant disease processes
- **Prepare for the future** – enhance research opportunities, and recruit, train, and support the next generation of scientists
- **Embrace new fields of science** – support new scientific approaches that will are likely to impact our field
- **Partner for greater impact** – create strategic alliances
- **Inclusion, Compassion, and Respect** – facilitate participation and seek to understand
- **Communicate** – the importance of our science

Structural Elements (Strategy) of the Vision

- **Basic Research** – understand how environmental exposures fundamentally alter human biology
- **Human Health and Disease** – focus on diseases that are, in part, caused by environmental exposures, and use exposures to both understand the etiology and pathogenesis of complex human diseases
- **Global Environmental Health** – support research programs to understand the health risks and solutions for populations that are excessively exposed
- **Training** – develop comprehensive approaches that integrate environmental sciences with related disciplines in basic science, computational biology, medicine, and public health

Future Programmatic Development Requires Strategic Planning

Goal – establish our priorities and develop a plan to support the very best science that will have the greatest impact on human health

Strategic Planning: NIEHS History

- **Man's Health and the Environment (1970)** – guided the early development of NIEHS and initiated the EHSRCs
- **Human Health and the Environment (1976)** – identified research needs focusing on pollutants of air, food, and water
- **Human Health and the Environment (1984)** – incorporate new developments in biology on issues in environmental health
- **Strategic Vision (2000)** –disease prevention, vulnerable populations, and new technologies (toxicogenomics)

Strategic Planning: Key Questions

- **What are the disease processes and public health concerns that are relevant to environmental sciences?**
- **How can environmental sciences be used to understand how biological systems work, why some individuals are more susceptible to disease, or why individuals with the same disease have very different clinical outcomes?**
- **What are the major opportunities and challenges in global environmental health?**
- **What are the critical exposures that need further investigation?**
- **What are the mission critical needs in training the next generation of scientists in environmental health?**
- **What technology or structural changes are needed to fundamentally advance environmental health science?**

Process and Timeline for Strategic Planning

Process will be inclusive and candid

- 1. Federal Register and NIEHS website**
- 2. Establish local strategic working group to plan and oversee process**
- 3. Strategic Planning Group – approximately 100 scientists and stakeholders (September, 2005)**
- 4. Draft document – public comment**
- 5. Final document – early 2006**

National Advisory Environmental Health Sciences Council (NAEHSC)

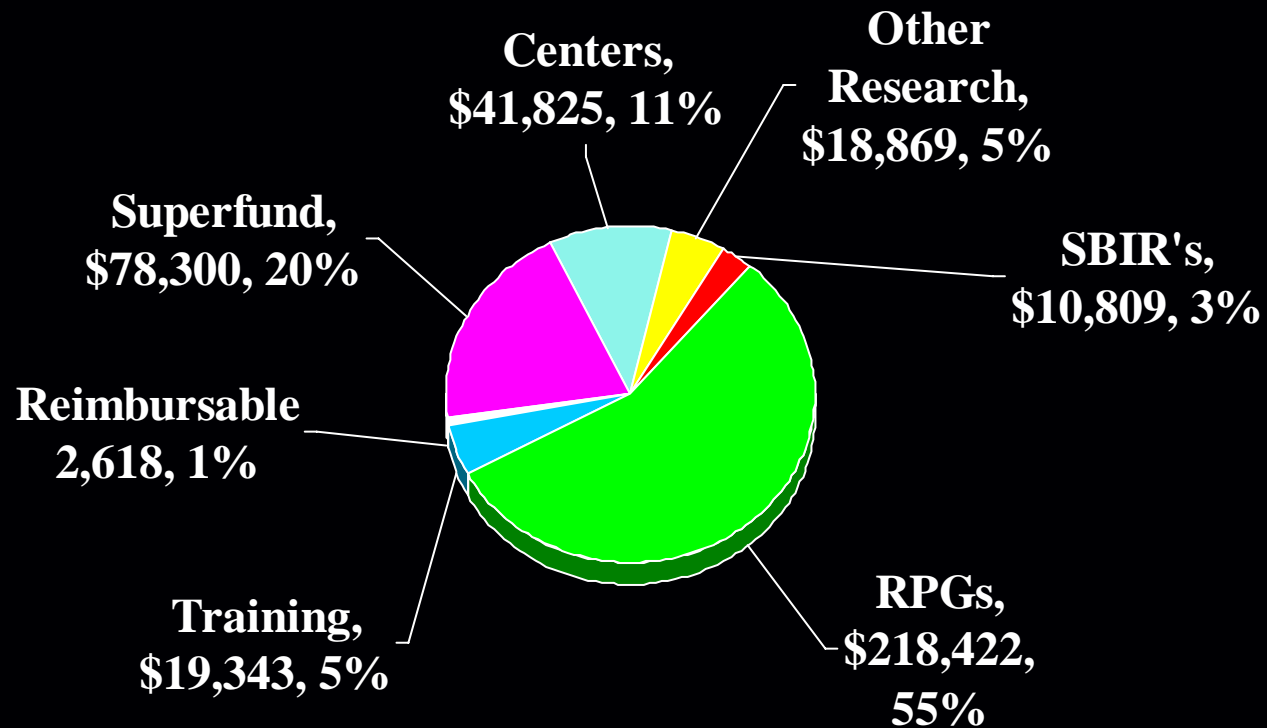
- **Mandated by Congress to provide secondary peer review**
- **Partnership:** wisdom and advice
- **Broad Input**
 - ☐ review scientific programs
 - ☐ consider new program development
 - ☐ career development
 - ☐ partnerships
 - ☐ review aspects of the intramural research program
 - ☐ annual progress report
- **Candid and open discussions**

NAEHSC: Charge to Committee

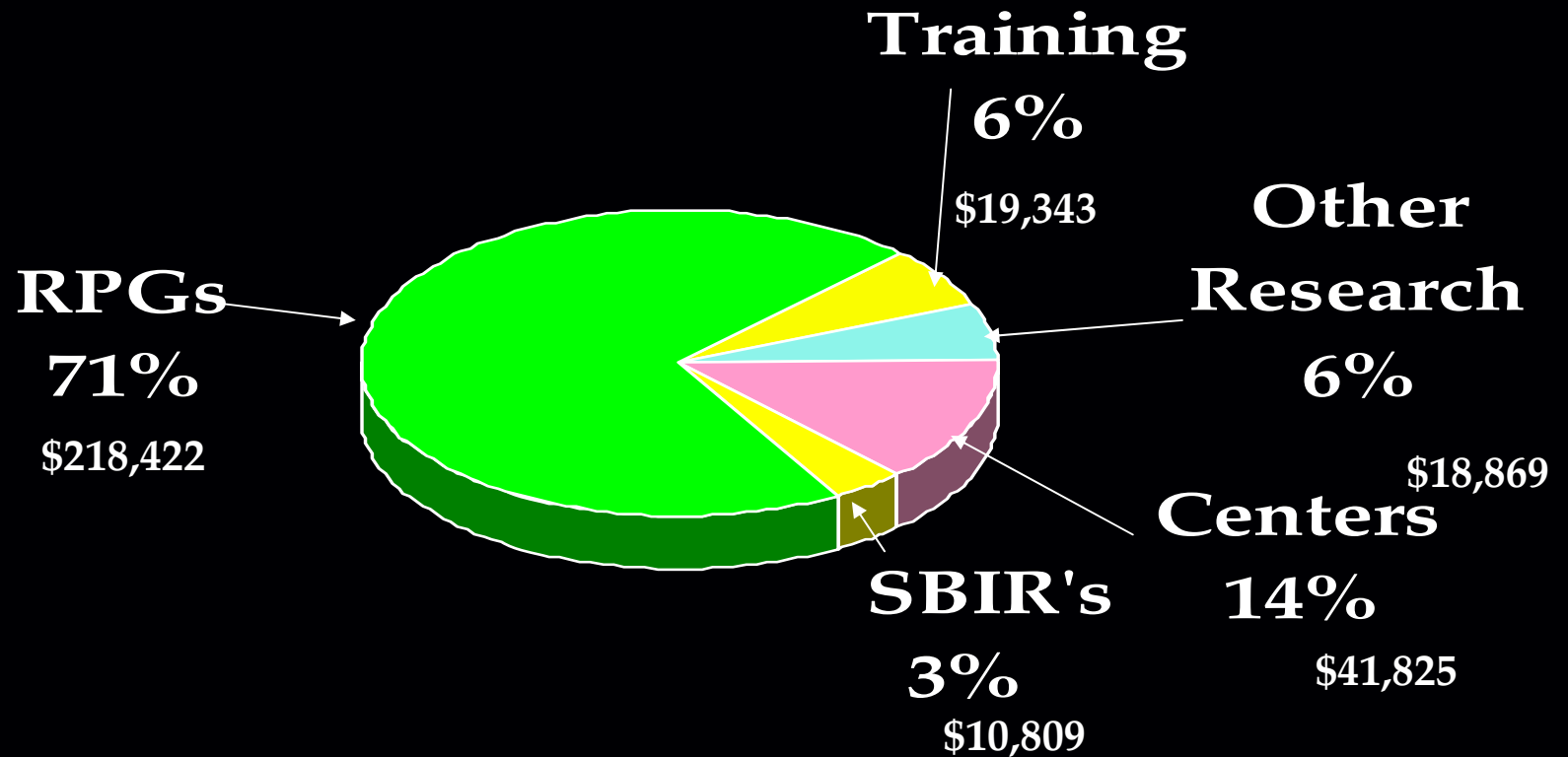
- **Strategic Planning**
- **Working Group to evaluate the extramural portfolio**
 - ☐ **Benchmarking to other Institutes**
 - ☐ **Impact**
 - ☐ **Productivity**

FY2004

Extramural Grants Distribution

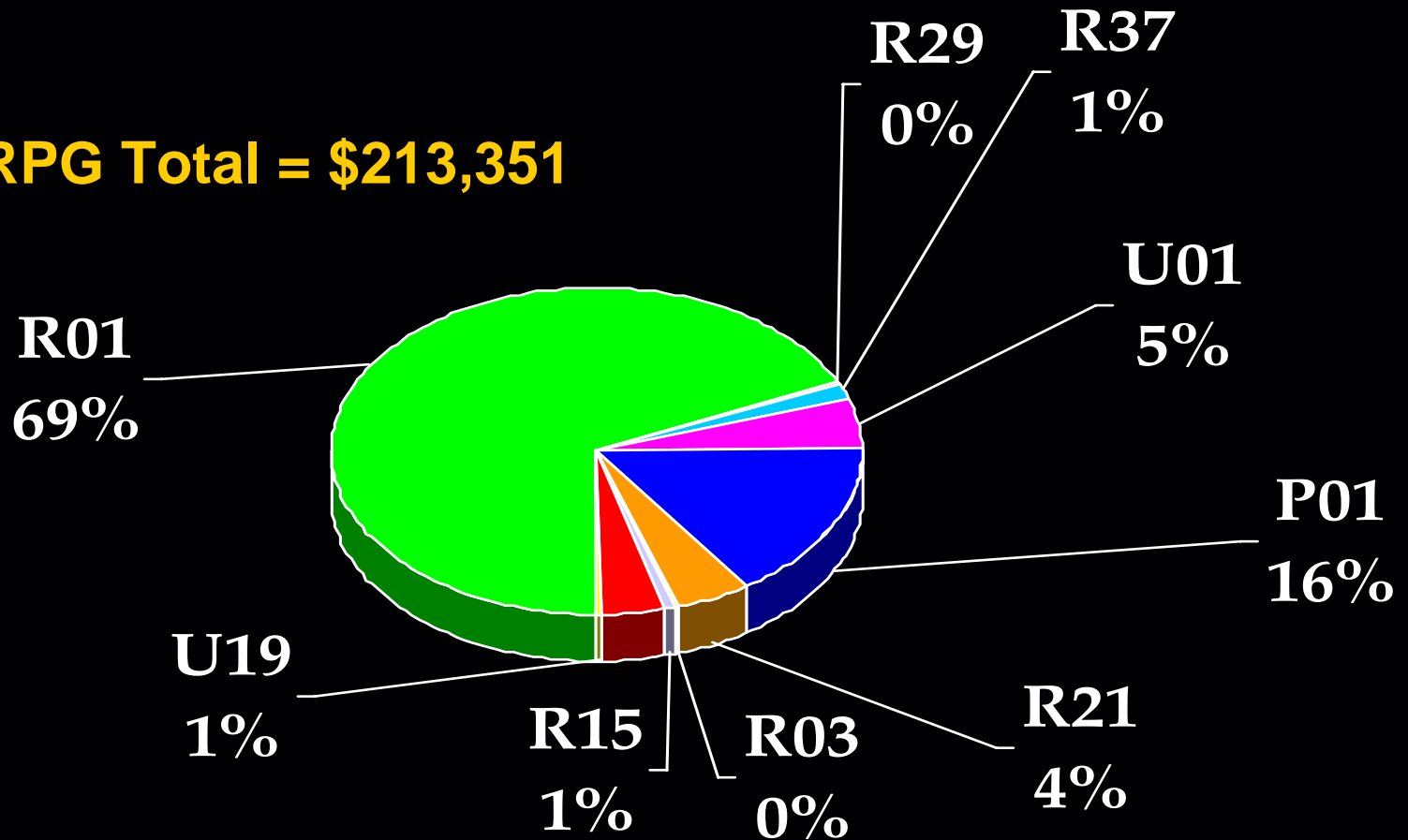


FY2004 Extramural Grants Distribution



Research Project Grant Distribution by Mechanism (FY2004)

FY2004 RPG Total = \$213,351



Evaluation of the Extramural Portfolio

- **Benchmarking: are the differences with other ICs reasonable given our mission and budget?**
 - ❑ Benchmark to other Institutes over last several years
 - ❑ Support for career development
 - ❑ Investment in investigator initiated activities
 - ❑ Investment in Centers
 - ❑ Targeted research (RFAs and PAs with set-asides)
 - ❑ Experience with MERIT awards
- **Impact and Productivity: are we getting enough bang for the buck?**
 - ❑ 30,000 ft view – which programs are most productive and have the highest impact
 - ❑ Metrics to assess impact and productivity
 - ❑ What additional tools needed?